



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[16-071]

Notice of Centennial Challenges 3D-Printed Habitat Structural Member Challenge

AGENCY: National Aeronautics and Space Administration (NASA)

SUMMARY: This notice is issued in accordance with 51 U.S.C. 20144(c). The 3D-Printed Habitat Challenge (3DP), Structural Member Competition is open and teams that wish to compete may now register. Centennial Challenges is a program of prize competitions to stimulate innovation in technologies of interest and value to NASA and the nation. The 3D-Printed Habitat Challenge Phase 2 Structural Member is a prize competition with a \$1,100,000 total prize purse to develop the fundamental technologies necessary to manufacture an off-world habitat using mission recycled materials and/or local indigenous materials.

DATES: Challenge registration opens October 7, 2016, and will remain open until January 31, 2017.

Other important dates:

March 31, 2017	Level 1: Truncated Cone Slump Test and Cylinder ASTM C39 Compression Results due to Judges
May 31, 2017	Level 2: Beam Member ASTM C78 Flexure Test Results due to Judges
August 24-27, 2017	Level 3: Structural Member Competition

ADDRESSES:

The challenge competition will take place at: Caterpillar Edwards Demonstration and Learning Center, 5801 N. Smith Road, Edwards, IL 61528.

FOR FURTHER INFORMATION:

To register for or get additional information regarding the 3D Printed Habitat Challenge, please visit: <http://bradley.edu/challenge>.

For general information on the NASA Centennial Challenges Program please visit:

<http://www.nasa.gov/challenges>. General questions and comments regarding the program should be addressed to Monsi Roman, Centennial Challenges Program, NASA Marshall Space Flight Center Huntsville, AL 35812. Email address: hq-stmd-centennialchallenges@mail.nasa.gov.

SUPPLEMENTARY INFORMATION:

Summary

The goal of the 3D-Printed Habitat Challenge is to foster the development of new technologies necessary to additively manufacture a habitat using local indigenous materials with, or without, recyclable materials. The Challenge is broken into three parts as described below.

- Design Competition - focused on developing innovative habitat architectural concepts that take advantage of the unique capabilities that 3D-Printing offers (completed in 2015).
- Structural Member Competition (Phase 2) – will focus on the core 3D-Printing fabrication technologies and materials properties needed to manufacture structural components from indigenous materials combined with recyclables, or indigenous materials alone; serves as a qualifier for participation in Phase 3.
- On-Site Habitat Competition (Phase 3) – (to be announced at a later date) will focus on the 3D-Printing fabrication of a scaled habitat design, using indigenous materials combined with recyclables, or indigenous materials alone, and will have a prize purse of \$1.4 million.

I. Prize Amounts

The 3D Printed Habitat Structural Member Competition purse is \$1,100,000 (one million one hundred thousand dollars) to be disbursed as follows:

Level 1 Prize

\$100,000 total prize money to be awarded to top 10 qualifiers based on scores.

Level 2 Prize

\$500,000 total prize money to be awarded to top 10 qualifiers based on scores.

Level 3 Prize

\$250,000 to first place

\$150,000 to second place

\$100,000 to third place

II. Eligibility

To be eligible to win a prize, competitors must:

- 1) Register and comply with all requirements in the rules and Team Agreement;
- 2) In the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and
- 3) Not be a Federal entity or Federal employee acting within the scope of their employment.

III. Rules

The complete rules for the 3D-Printed Habitat Challenge can be found at:

<http://bradley.edu/challenge>

Cheryl Parker

NASA Federal Register Liaison Officer

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